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Revision/Review Log

1.0 Introduction

After a beamline has been commissioned or reestablished after modification, the Radiological Control Division (RCD) conducts a documented radiological survey to assess the performance of shielding. If the beamline is acceptable for routine operation it is turned over to the users, otherwise it will remain out of service for experimental use until any necessary improvements to the shielding are installed.

The NSLS Safety Officer may chose to perform additional measurements on the beamline to verify that the subsequent operation of the beamline is consistent with the initial survey performed by RCD.

2.0 Responsibilities

2.1 Radiological Control Division (RCD) personnel are responsible to conduct radiological surveys and establish baseline radiological conditions of a beamline.

2.2 The NSLS Safety Officer is responsible to determine when secondary frisks of a beamline are needed to collect confirmatory data with respect to the baseline survey performed by RCD.

2.3 The NSLS Safety Officer and Facility Support Representative are responsible to review beamline frisk data and determine if quantitative follow up surveys are required to be performed by RCD.

2.3 If a secondary frisk occurs during normal working hours, RCD is responsible to perform the measurements.

2.4 If a secondary frisk occurs outside normal working hours, the Operations Coordinators are responsible to conduct and document the frisk in accordance with this procedure.

3. Procedure

3.1 Communicate with the beam line contact to verify operating conditions are suitable to perform a frisk.

3.2 Obtain a copy of the beamline diagram.

3.3 Obtain a GM instrument from the Control Room cabinet and the check source and source jig from the RCD storage area across from the Control Room. Perform the preoperational checks:

- Physical inspection
- Verify calibration due date
- Set the instrument battery test.
- Perform source response check on the x1 and x10 ranges. The results must be within +/− 20% of expected value.

Note: If the instrument fails any of the steps, attach a DO NOT USE tag to the instrument.

3.4 Record beam line parameters

- Storage ring energy and current.
- Beam line configuration

3.5 Frisk the beamline or specific component(s) as specified by the Safety Officer.

- Position the GM probe with the window facing the beamline at contact and move it at a speed of about 2 inches per second.

3.6 Normalize the measured count rate(s) to 300 mA.

- Multiply the measured count rate by (300 ÷ beam current).

3.7 Evaluate the normalized results and determine the need for additional follow up actions:

- If ≤ 500 cpm on contact, no action.

- If > 500 but ≤ 10,000 cpm on contact then, inform the Local Contact that level is acceptable to continue running, but minor additional shielding is required. Record this in the OpCo Logbook and promptly inform the Safety Officer. The Safety Officer shall make a determination on continued operation of the beamline.

- If > 10,000 cpm on contact, promptly notify the Safety Officer and shutdown the beamline until RCD is present to conduct a formal radiological survey.

3.8 Communicate and file the results of the frisk.

- Distribute a copy of the completed frisk to the RCD Facility Support Representative.
- Place the original completed form the Control Room Frisk Book.
- Make appropriate entries in the OpCo logbook